

FISHES

The world of water does not consist only of the fish we use for food. Together with these live other creatures having a place and usefulness of their own. And they are all worth knowing.

— L. Roule, 1935,
*Fishes and Their
Ways of Life*



FISHES

Lyons, *et al.* (2000) recently published an updated checklist, along with information on the occurrence, taxonomic status, distribution, and abundance of fishes in Wisconsin. We adapted that work and reproduce it here. Species-level taxonomy in the checklist follows that in the fifth edition of *Common and Scientific Names of Fishes from the United States and Canada* published by the American Fisheries Society (Robins, *et al.* 1991). This list will be updated soon and may include scientific name changes for several Wisconsin species to match names proposed by Mayden, *et al.* (1992). We show these likely changes in parentheses in the checklist. Higher level taxonomy (orders and families) follows Nelson (1994), with the exception of the Cottidae (sculpins) which are placed in the order Perciformes consistent with Mooi and Gill (1995). Species are listed alphabetically under each family. Hybrids are not included. Common names follow Robins, *et al.* (1991).

The final revision of the Wisconsin checklist contains 159 fish species in 27 families. One hundred forty-five are native to the state. Fourteen are introduced non-native species. No Wisconsin fishes are listed as endangered or threatened at the federal level. Ten fish species are listed as endangered at the state level and 11 species are considered threatened at the state level.

Excluded Fish Species

We exclude several fish species from our checklist. Lyons, *et al.* (2000) categorized 19 non-native fish species as “transient” because self-sustaining populations of these species have not been found within the state. These hypothetical species (Table 1) are excluded from our checklist, since they do not meet our criteria for inclusion.

Table 1. Transient non-native fish species excluded from the checklist.

<i>Alosa sapidissima</i>	American Shad
<i>Ctenopharyngodon idella</i>	Grass Carp
<i>Cyprinella lutrensis</i>	Red Shiner
<i>Epalzeorhynchus frenatum</i>	Rainbow Sharkminnow
<i>Scardinius erythrophthalmus</i>	Rudd
<i>Tinca tinca</i>	Tench
<i>Colossoma</i> or <i>Piaractus</i> sp.	“Pacu” or “Pirapatinga”
<i>Pygocentrus nattereri</i>	“Red” Piranha
<i>Ictalurus furcatus</i>	Blue Catfish
<i>Phractocephalus hemiliopterus</i>	Redtail Catfish
<i>Oncorhynchus clarki</i>	Cutthroat Trout
<i>Oncorhynchus gorbuscha</i>	Pink Salmon
<i>Salmo salar</i>	Atlantic Salmon
<i>Thymallus arcticus</i>	Arctic Grayling
<i>Gambusia affinis</i>	Western Mosquitofish
<i>Poecilia reticulata</i>	Guppy
<i>Morone saxatilis</i>	Striped Bass
<i>Astronotus ocellatus</i>	Oscar
<i>Tilapia</i> or <i>Oreochromis</i> sp.	“Tilapia”



JAMES VOY

In addition, Becker (1983) listed Longjaw Cisco (*Coregonus alpenae*) as occurring in the state. This species is now considered a synonym of the Shortjaw Cisco (*Coregonus zenithicus*) and is therefore excluded from the checklist.

Extinct Fish Species

In addition to the above listed species, we exclude the Deepwater Cisco (*Coregonus johanna*) and Shortnose Cisco (*C. reighardi*) from our list. Both species occurred in Lake Michigan, but are now believed to be extinct (Page and Burr 1991, Robins, *et al.* 1991, Coon 1999).

The Wisconsin Ichthyological Literature

The literature dealing with the life history, ecology, distribution, status and biology of Wisconsin fishes is extensive. Material has been published in a variety of ichthyology, ecology, zoology and fisheries management periodicals, as well as in numerous government reports. Most significant older works are included in the bibliography in Dr. George Becker's (1983) *Fishes of Wisconsin*. However, there has been no published bibliography of works dealing with Wisconsin fishes since Becker's work. Such a tool would be useful to professional fisheries managers, biologists, anglers and others interested in Wisconsin fishes. A considerable amount of biological information is also contained in unpublished agency records and files. Dr. John Lyons and colleagues have initiated work to update and rewrite *Fishes of Wisconsin* (J. Lyons, pers. comm.), and that work will likely bring the bibliography up to date.

Fish Survey and Atlas Efforts

In the mid-1970s, a research effort was initiated by the Wisconsin Department of Natural Resources (DNR) to systematically sample the distribution and relative abundances of fishes throughout the inland waters of Wisconsin. The study focused primarily on a survey of then current fish distribution, but also synthesized historical distribution records where these were available (Fago 1992). Reduced funding terminated the study in the 1980s before the entire state could be surveyed. Findings from the initial work are summarized in Fago (1992) and a number of previous basin-specific reports referenced therein. Voucher specimens from this study are maintained in the Milwaukee Public Museum's vertebrate zoology collection. No systematic statewide inventory has occurred since the Fish Distribution Survey was terminated. However, many additional fisheries studies have been carried out, including studies of entire fish communities in certain habitat types and detailed surveys of all habitats within specific regions. Lyons, *et al.* (2000) identify these more recent studies. Systematic statewide surveys for specific species (e.g., several lampreys, minnows, suckers, and darters; Paddlefish; Slender Madtom; Slimy Sculpin; and Longear Sunfish) have also been conducted (J. Lyons, pers. comm.).



Class Cephalaspidomorphi: Lampreys

Order Petromyzontiformes: Lampreys

Family Petromyzontidae: Lampreys

- Ichthyomyzon castaneus* Chestnut Lamprey
- Ichthyomyzon fossor* Northern Brook Lamprey
- Ichthyomyzon gagei* Southern Brook Lamprey
- Ichthyomyzon unicuspis* Silver Lamprey
- Lampetra appendix* American Brook Lamprey
- INT** *Petromyzon marinus* Sea Lamprey

Class Actinopterygii: Ray-finned Fishes

Order Acipenseriformes: Sturgeons and Paddlefishes

Family Acipenseridae: Sturgeons

- Acipenser fulvescens* Lake Sturgeon
- Scaphirhynchus platorhynchus* .. Shovelnose Sturgeon

Family Polyodontidae: Paddlefishes

- ST** *Polyodon spathula* Paddlefish

Order Semionotiformes: Gars

Family Lepisosteidae: Gars

- Lepisosteus osseus* Longnose Gar
- Lepisosteus platostomus* Shortnose Gar

Order Amiiformes: Bowfins

Family Amiidae: Bowfins

- Amia calva* Bowfin

Order Osteoglossiformes: Mooneyes

Family Hiodontidae: Mooneyes

- SE** *Hiodon alosoides* Goldeye
- Hiodon tergisus* Mooneye

Order Anguilliformes: Eels

Family Anguillidae: Freshwater Eels

- Anguilla rostrata* American Eel¹

Order Clupeiformes: Herrings

Family Clupeidae: Herrings

- SE** *Alosa chrysochloris* Skipjack Herring
- INT** *Alosa pseudoharengus* Alewife
- Dorosoma cepedianum* Gizzard Shad

Order Cypriniformes: Minnows and Suckers

Family Cyprinidae: Minnows and Carps

- Campostoma anomalum* Central Stoneroller
- Campostoma oligolepis* Largescale Stoneroller
- INT** *Carassius auratus* Goldfish
- Clinostomus elongatus* Redside Dace
- Couesius plumbeus* Lake Chub

¹ While native in the Mississippi River basin, the catadromous American Eel (*Anguilla rostrata*) is an introduced species in Wisconsin waters of the Great Lakes. Although some individuals may swim all the way from the Atlantic Ocean to Lake Superior, natural barriers precluded this in historical times. In addition, it is likely that individuals of this species arrive in the ballast water of ocean-going vessels.



	<i>Cyprinella spiloptera</i>	Spotfin Shiner
INT	<i>Cyprinus carpio</i>	Common Carp
SE	<i>Erimystax x-punctatus</i> ²	Gravel Chub
	<i>Hybognathus hankinsoni</i>	Brassy Minnow
	<i>Hybognathus nuchalis</i>	Mississippi Silvery Minnow
SE	<i>Luxilus chrysocephalus</i>	Striped Shiner
	<i>Luxilus cornutus</i>	Common Shiner
ST	<i>Lythrurus umbratilis</i>	Redfin Shiner
ST	<i>Macrhybopsis aestivalis</i>	Speckled Chub
	<i>Macrhybopsis storeriana</i>	Silver Chub
	<i>Margariscus margarita</i>	Pearl Dace
	<i>Nocomis biguttatus</i>	Hornyhead Chub
	<i>Notemigonus crysoleucas</i>	Golden Shiner
SE	<i>Notropis (Hybopsis) amnis</i>	Pallid Shiner
ST	<i>Notropis anogenus</i>	Pugnose Shiner
	<i>Notropis atherinoides</i>	Emerald Shiner
	<i>Notropis blennius</i>	River Shiner
EXT	<i>Notropis buchani</i>	Ghost Shiner
EXT	<i>Notropis chalybaeus</i>	Ironcolor Shiner
	<i>Notropis dorsalis</i>	Bigmouth Shiner
	<i>Notropis heterodon</i>	Blackchin Shiner
	<i>Notropis heterolepis</i>	Blacknose Shiner
	<i>Notropis hudsonius</i>	Spottail Shiner
ST	<i>Notropis nubilus</i>	Ozark Minnow
	<i>Notropis rubellus</i>	Rosyface Shiner
	<i>Notropis stramineus (Iudibundus)</i>	Sand Shiner
	<i>Notropis texanus</i>	Weed Shiner
	<i>Notropis volucellus</i>	Mimic Shiner
	<i>Notropis wickliffi</i>	Channel Shiner
	<i>Opsopoeodus emiliae</i>	Pugnose Minnow
	<i>Phenacobius mirabilis</i>	Suckermouth Minnow
	<i>Phoxinus eos</i>	Northern Redbelly Dace
	<i>Phoxinus erythrogaster</i>	Southern Redbelly Dace
	<i>Phoxinus neogaeus</i>	Finescale Dace
	<i>Pimephales notatus</i>	Bluntnose Minnow
	<i>Pimephales promelas</i>	Fathead Minnow
	<i>Pimephales vigilax</i>	Bullhead Minnow
	<i>Rhinichthys atratulus</i>	Blacknose Dace
	<i>Rhinichthys cataractae</i>	Longnose Dace
	<i>Semotilus atromaculatus</i>	Creek Chub
Family Catostomidae: Suckers		
	<i>Carpiodes carpio</i>	River Carpsucker
	<i>Carpiodes cyprinus</i>	Quillback
	<i>Carpiodes velifer</i>	Highfin Carpsucker
	<i>Catostomus catostomus</i>	Longnose Sucker
	<i>Catostomus commersoni</i>	White Sucker
ST	<i>Cycleptus elongatus</i>	Blue Sucker
EXT	<i>Erimyzon oblongus</i>	Creek Chubsucker
	<i>Erimyzon sucetta</i>	Lake Chubsucker
	<i>Hypentelium nigricans</i>	Northern Hog Sucker

² Listed in NR 27.03(2), Wis. Admin. Code, as “*Erimysto*” *x-punctata*, a misspelling of *Erimystax*.





Family Catostomidae: Suckers (*continued*)

- Ictiobus bubalus* Smallmouth Buffalo
- Ictiobus cyprinellus* Bigmouth Buffalo
- ST** *Ictiobus niger* Black Buffalo
- Minytrema melanops* Spotted Sucker
- Moxostoma anisurum* Silver Redhorse
- ST** *Moxostoma carinatum* River Redhorse
- SE** *Moxostoma duquesnei* Black Redhorse
- Moxostoma erythrurum* Golden Redhorse
- Moxostoma macrolepidotum* Shorthead Redhorse
- ST** *Moxostoma valenciennesi* Greater Redhorse

Order Siluriformes: Catfishes

Family Ictaluridae: Bullhead Catfishes

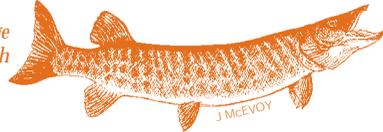
- Ameiurus melas* Black Bullhead
- Ameiurus natalis* Yellow Bullhead
- Ameiurus nebulosus* Brown Bullhead
- Ictalurus punctatus* Channel Catfish
- SE** *Noturus exilis* Slender Madtom
- Noturus flavus* Stonecat
- Noturus gyrinus* Tadpole Madtom
- Pylodictis olivaris* Flathead Catfish

Order Esociformes: Pikes and Allies

Family Esocidae: Pikes

- Esox americanus* Grass Pickerel
- Esox lucius* Northern Pike
- Esox masquinongy* Muskellunge

Muskellunge
Wisconsin State Fish



Family Umbridae: Mudminnows

- Umbra limi* Central Mudminnow

Order Osmeriformes: Smelts and Allies

Family Osmeridae: Smelts

- INT** *Osmerus mordax* Rainbow Smelt

Order Salmoniformes: Trouts and Allies

Family Salmonidae: Trouts

- Coregonus artedi* Cisco³
- Coregonus clupeaformis* Lake Whitefish
- Coregonus hoyi* Bloater
- Coregonus kiyi* Kiyi⁴
- EXT** *Coregonus nigripinnis* Blackfin Cisco
- Coregonus zenithicus* Shortjaw Cisco⁴
- INT** *Oncorhynchus kisutch* Coho Salmon
- INT** *Oncorhynchus mykiss* Rainbow Trout

³ The Cisco (*Coregonus artedi*) is also frequently referred to as the Lake Herring.
⁴ Kiyi (*Coregonus kiyi*) and Shortjaw Cisco (*C. zenithicus*) are extirpated from Lake Michigan, but remain in low numbers in Lake Superior (Lyons, *et al.* 2000).



INT	<i>Oncorhynchus nerka</i>	Kokanee Salmon ⁵
INT	<i>Oncorhynchus tshawytscha</i>	Chinook Salmon
	<i>Prosopium coulteri</i>	Pygmy Whitefish
	<i>Prosopium cylindraceum</i>	Round Whitefish
INT	<i>Salmo trutta</i>	Brown Trout
	<i>Salvelinus fontinalis</i>	Brook Trout
	<i>Salvelinus namaycush</i>	Lake Trout

Order Percopsiformes: Trout-perches and Pirate Perch

Family Percopsidae: Trout-perches	
	<i>Percopsis omiscomaycus</i> Trout-perch
Family Aphredoderidae: Pirate Perch	
	<i>Aphredoderus sayanus</i> Pirate Perch

Order Gadiformes: Codfishes

Family Gadidae: Cods	
	<i>Lota lota</i> Burbot

Order Atheriniformes: Silversides

Family Atherinidae: Silversides	
	<i>Labidesthes sicculus</i> Brook Silverside

Order Cyprinodontiformes: Topminnows and Killifishes

Family Fundulidae: Topminnows and Killifishes	
	<i>Fundulus diaphanus</i> Banded Killifish
SE	<i>Fundulus dispar</i> Northern Starhead Topminnow
	<i>Fundulus notatus</i> Blackstripe Topminnow

Order Gasterosteiformes: Sticklebacks

Family Gasterosteidae: Sticklebacks	
	<i>Culaea inconstans</i> Brook Stickleback
INT	<i>Gasterosteus aculeatus</i> Threespine Stickleback
	<i>Pungitius pungitius</i> Ninespine Stickleback

Order Perciformes: Perch-like Fishes

Family Cottidae: Sculpins	
	<i>Cottus bairdi</i> Mottled Sculpin
	<i>Cottus cognatus</i> Slimy Sculpin
	<i>Cottus ricei</i> Spoonhead Sculpin
	<i>Myoxocephalus thompsoni</i> Deepwater Sculpin
Family Moronidae: Temperate Basses	
INT	<i>Morone americana</i> White Perch
	<i>Morone chrysops</i> White Bass
	<i>Morone mississippiensis</i> Yellow Bass
Family Centrarchidae: Sunfishes	
	<i>Ambloplites rupestris</i> Rock Bass
	<i>Lepomis cyanellus</i> Green Sunfish
	<i>Lepomis gibbosus</i> Pumpkinseed
	<i>Lepomis gulosus</i> Warmouth
	<i>Lepomis humilis</i> Orangespotted Sunfish
	<i>Lepomis macrochirus</i> Bluegill

⁵ The Kokanee Salmon (*Oncorhynchus nerka*) is a freshwater form of the anadromous Sockeye Salmon.





Family Centrarchidae: Sunfishes (*continued*)

- ST** *Lepomis megalotis* Longear Sunfish
- Micropterus dolomieu* Smallmouth Bass
- Micropterus salmoides* Largemouth Bass
- Pomoxis annularis* White Crappie
- Pomoxis nigromaculatus* Black Crappie

Family Percidae: Perches

- SE** *Ammocrypta (Crystallaria) asprella*⁶ Crystal Darter
- Ammocrypta clara* Western Sand Darter
- Etheostoma asprigene* Mud Darter
- Etheostoma caeruleum* Rainbow Darter
- SE** *Etheostoma chlorosoma* Bluntnose Darter
- Etheostoma exile* Iowa Darter
- Etheostoma flabellare* Fantail Darter
- Etheostoma microperca* Least Darter
- Etheostoma nigrum* Johnny Darter
- Etheostoma zonale* Banded Darter
- INT** *Gymnocephalus cernuus* Ruffe
- Perca flavescens* Yellow Perch
- Percina caprodes* Logperch
- ST** *Percina evides* Gilt Darter
- Percina maculata* Blackside Darter
- Percina phoxocephala* Slenderhead Darter
- Percina shumardi* River Darter
- Stizostedion canadense* Sauger
- Stizostedion vitreum* Walleye

Family Sciaenidae: Drums

- Aplodinotus grunniens* Freshwater Drum

Family Gobiidae: Gobies

- INT** *Neogobius melanostomus* Round Goby

⁶ Listed in NR 27.03(2), Wis. Admin. Code, as *Crystallaria asprella*.



Primary Fish References: Lyons, *et al.* 2000, Coon 1999, Fago 1992, Page and Burr 1991, Holland-Bartels, *et al.* 1990, Becker 1983, Auer 1982, Eddy and Underhill 1974, Smith, *et al.* 1971.

